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2. (Original) A method according to claim 1, wherein the chemically modified mutant enzyme is screened for amidase activity.

3. (Original) A method according to claim 1, wherein the chemically modified mutant enzyme is screened for esterase activity.

4. (Currently Amended) A method according to claim 1, wherein said modifying [providing a chemically modified mutant enzyme] further comprises:

[providing cysteine mutants of an enzyme, wherein one or more amino acid residues in the enzyme are replaced by cysteine residues;]

providing methanethiosulfate reagents;

combining the [cysteine mutants of an enzyme] chemically modified mutant enzyme, the methanethiosulfonate reagents, and a buffer solution, wherein the cysteine residues are modified by replacing thiol

5. (Currently Amended) A method according to claim 1 further comprising:

modifying a plurality of enzymes thereby creating [providing] a plurality of chemically modified mutant enzymes with one or more amino acid residues from enzymes being replaced by cysteine residues, wherein the cysteine residues are modified by replacing the thiol hydrogen in at least some of the cysteine residues with a thiol side chain;

contacting the plurality of chemically modified mutant enzymes with a substrate for an amidase and/or a substrate for an esterase; and

determining whether the plurality of chemically modified mutant enzymes exhibit amidase and/or esterase activity.

6. (Original) A method according to claim 1, wherein the ratio of chemically modified mutant enzyme to substrate is from about 1 M:10 M to about 1 M:10<sup>8</sup> M.

7. (Original) A method according to claim 1, wherein the ratio of chemically modified mutant enzyme to substrate is from about 1 M:10 M to about 1 M:10<sup>10</sup> M.

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8. (Original) A method according to claim 1, wherein the enzyme is a protease.

9. (Original) A method according to claim 8, wherein the protease is a *Bacillus lentus subtilisin*.

10. (Currently Amended) A method according to claim 1, wherein [the amino acid replaced with a cysteine is an amino acid selected from the group consisting of] an asparagine, a leucine, and/or a serine is chosen to be the amino acid replaced with a cysteine.